

# PC-ABS

Production-Grade Thermoplastic  
for Fortus 3D Production Systems



PC-ABS (polycarbonate-ABS) is one of the most widely used industrial thermoplastics. PC-ABS offers the most desirable properties of both materials - the superior strength and heat resistance of PC and the flexibility of ABS. PC-ABS blends are commonly used in automotive, electronics and telecommunications applications. Additionally, a PC-ABS part manufactured on a Fortus® 3D Production System is 5-60 percent stronger than a part made on previous FDM® systems. When combined with a Fortus system, PC-ABS gives you Real Parts™ conceptual modeling, functional prototyping, manufacturing tools, and end-use-parts.

Mechanical Properties <sup>1</sup>	Test Method	English	Metric
Tensile Strength (Type 1, 0.125", 0.2"/min)	ASTM D638	5,900 psi	41 MPa
Tensile Modulus (Type 1, 0.125", 0.2"/min)	ASTM D638	278,000 psi	1,900 MPa
Tensile Elongation (Type 1, 0.125", 0.2"/min)	ASTM D638	6%	6%
Flexural Strength (Method 1, 0.05"/min)	ASTM D790	9,800 psi	68 MPa
Flexural Modulus (Method 1, 0.05"/min)	ASTM D790	280,000 psi	1,900 MPa
IZOD Impact, notched (Method A, 23°C)	ASTM D256	3.7 ft-lb/in	196 J/m
IZOD Impact, un-notched (Method A, 23°C)	ASTM D256	9 ft-lb/in	481 J/m

Thermal Properties <sup>2</sup>	Test Method	English	Metric
Heat Deflection (HDT) @ 66 psi	ASTM D648	230°F	110°C
Heat Deflection (HDT) @ 264 psi	ASTM D648	205°F	96°C
Vicat Softening Temperature	ASTM D1525	234°F	112°C
Glass Transition Temperature (Tg)	DMA (SSYS)	257°F	125°C
Coefficient of Thermal Expansion	-----	4.10 E -05 in/in/°F	-----
Melt Point	-----	Not Applicable <sup>3</sup>	Not Applicable <sup>3</sup>

Electrical Properties <sup>4</sup>	Test Method	Value Range
Volume Resistivity	ASTM D257	2.0x10e14 - 4.4x10e13 ohms
Dielectric Constant	ASTM D150-98	2.9 - 2.7
Dissipation Factor	ASTM D150-98	.0035 - .0032
Dielectric Strength	ASTM D149-09, Method A	340 - 90 V/mil

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Other <sup>2</sup>	Test Method	Value
Specific Gravity	ASTM D792	1.10
Density	ASTM D792	0.0397 lb/in <sup>3</sup>
Flame Classification	UL94	HB
Rockwell Hardness	ASTM D785	R110
UL File Number	-----	E345258

System Availability	Layer Thickness Capability	Support Structure	Available Colors
Fortus 360mc	0.013 inch (0.330 mm)	Soluble Supports	■ Black
Fortus 400mc	0.010 inch (0.254 mm)		
Fortus 900mc	0.007 inch (0.178 mm) 0.005 inch (0.127 mm) <sup>5</sup>		

The information presented are typical values intended for reference and comparison purposes only. They should not be used for design specifications or quality control purposes. End-use material performance can be impacted (+/-) by, but not limited to, part design, end-use conditions, test conditions, etc. Actual values will vary with build conditions. Tested parts were built on Fortus 400mc @ 0.010" (0.254 mm) slice. Product specifications are subject to change without notice.

The performance characteristics of these materials may vary according to application, operating conditions, or end use. Each user is responsible for determining that the Stratasys material is safe, lawful, and technically suitable for the intended application, as well as for identifying the proper disposal (or recycling) method consistent with applicable environmental laws and regulations. Stratasys makes no warranties of any kind, express or implied, including, but not limited to, the warranties of merchantability, fitness for a particular use, or warranty against patent infringement.

<sup>1</sup>Build orientation is on side long edge.

<sup>2</sup>Literature value unless otherwise noted.

<sup>3</sup>Due to amorphous nature, material does not display a melting point.

<sup>4</sup>All Electrical Property values were generated from the average of test plaques built with default part density (solid). Test plaques were 4.0 x 4.0 x 0.1 inches (102 x 102 x 2.5 mm) and were built both in the flat and vertical orientation. The range of values is mostly the result of the difference in properties of test plaques built in the flat vs. vertical orientation.

<sup>5</sup>0.005 inch (0.127 mm) layer thickness not available for Fortus 900mc

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## At the core:

### Advanced FDM Technology™

Fortus systems are based on patented Stratasys FDM (Fused Deposition Modeling) technology. FDM is the industry's leading additive manufacturing technology, and the only one that uses production grade thermoplastics, enabling the most durable parts.

Fortus systems use a wide range of thermoplastics with advanced mechanical properties so your parts can endure high heat, caustic chemicals, sterilization, and high impact applications.

### No special facilities needed

You can install a Fortus 3D Production System just about anywhere. No special venting is required because Fortus systems don't produce noxious fumes, chemicals, or waste.

### No special skills needed

Fortus 3D Production Systems are easy to operate and maintain compared to other additive fabrication systems because there are no messy powders or resins to handle and contain. They're so simple, an operator can be trained to operate a Fortus system in less than 30 minutes.

### Get your benchmark on the future of manufacturing

Fine details. Smooth surface finishes. Accuracy. Strength. The best way to see the advantages of a Fortus 3D Production System is to have your own part built on a Fortus system. Get your free part at: [stratasys.com](http://stratasys.com).